

# Cambridge Electronic Design Limited

## Changing the monitor ROM in a CED micro1401 mk 1

### Introduction

ROMs for the CED micro1401 are 28-pin dual-in-line devices, installed in chip sockets on the main circuit board. You will not need to do any soldering to change a ROM, but you will need to open the case. There are positions for two ROMs, "0" and "1"; monitor ROMs always go in the socket labelled "ROM 0".

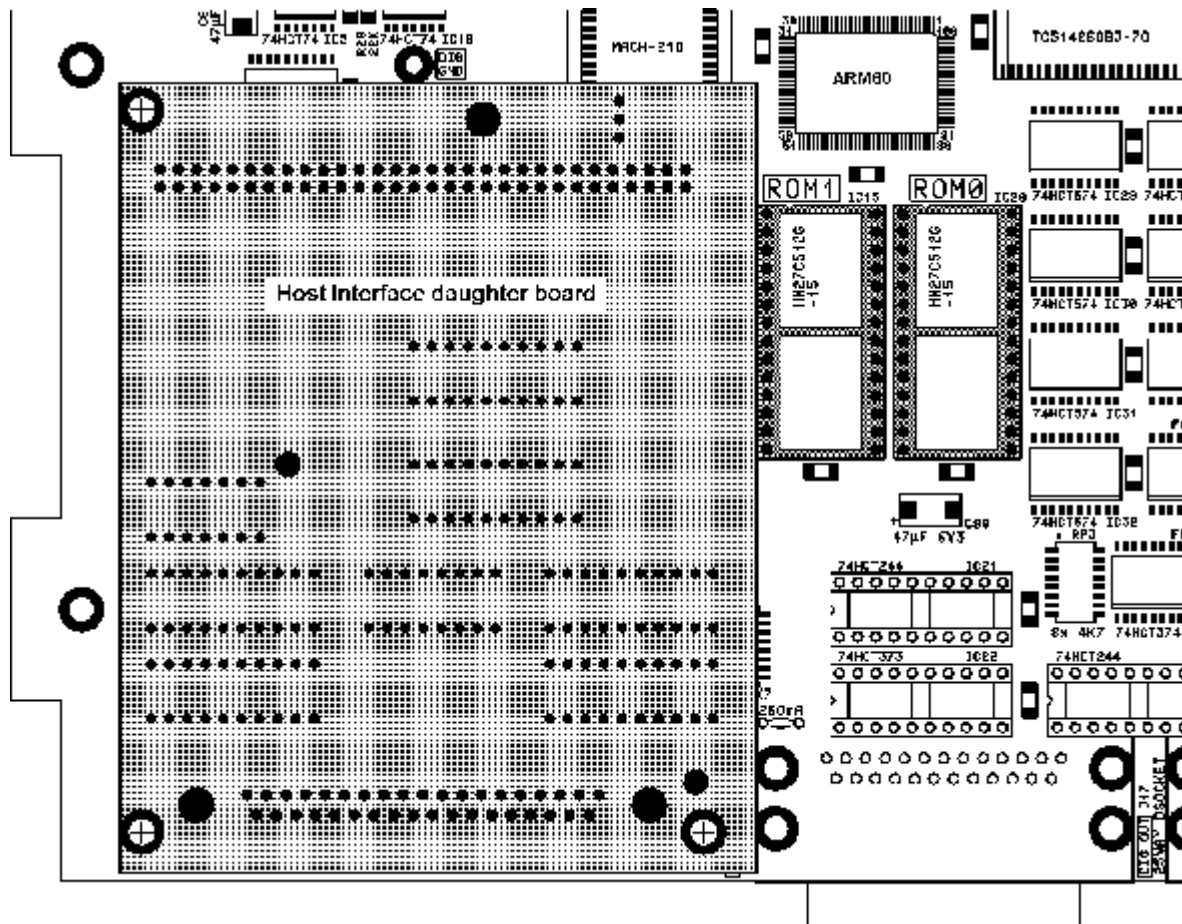
### What you will need

It is essential to take precautions against electrostatic discharge. Before handling the ROMs or opening your micro1401 you should earth yourself to the micro1401, preferably with a wrist strap also connected to mains earth. You will need:

- A small cross-head screwdriver (earlier models) or a 2mm Allen key (later models)
- A chip extractor (a flat-bladed screwdriver will do)
- A piece of conductive foam or conductive tube

### Opening the micro1401

1. Switch off the micro1401 and remove all cables connected to it.
2. Place the micro1401 on a bench with the rear facing you.
3. Undo the four black countersunk screws from the rear panel, using cross-head screwdriver or Allen key as appropriate, and swing it away. You do not need to undo the yellow/green earth strap.
4. Slide the bright-metal inner case about halfway out of the outer case, and unscrew the yellow/green earth strap from the inner case. Note the order of the washers.



ROM sockets (dark grey). Note position relative to Host Interface daughter board

5. Remove the inner case. Try not to splay the side extrusions of the outer case. Removing the rear panel compromises the rigidity of the outer case.
6. Unscrew the six vertical screws on the side flanges of the inner case. Lift off the top.

### **Identifying the old ROM**

The ROM sockets are positioned next to the Host Interface daughter board. Identify the ROM to be changed. Monitor ROMs plug into the socket furthest from the Host Interface, labelled "ROM 0". The ROMs themselves are clearly labelled "CED Micro1401 Mon ROM", and "IC20" together with the version number.

### **Removing the old ROM**

Ensure that you are properly earthed (see above). Slide a chip extractor or a narrow screwdriver blade between the chip and the socket, and pull the chip upward with a gentle rocking motion. Try to avoid touching the chip's legs; hold it by its short edges. Also try to avoid bending the legs as the chip comes out. Push the old chip into a piece of conductive foam or tubing for safe storage and return to CED. Alternatively wrap it in aluminium foil.

### **Inserting the new ROM**

It is essential that the chip is inserted the right way round. The chip is marked with a notch at one end; this identifies pin 1. The socket also is marked with a notch to identify pin 1. Pin 1 is nearest the front of the micro1401. While still properly earthed, remove the new ROM from its antistatic tube or conductive foam. Offer the chip to the socket, making sure that all the pins enter the holes in the socket. If the legs are sprung outward, insert one row and gently push the other row into alignment using a small steel ruler or similar tool. Press the chip firmly down until it is seated.

### **Problems to avoid when inserting chips**

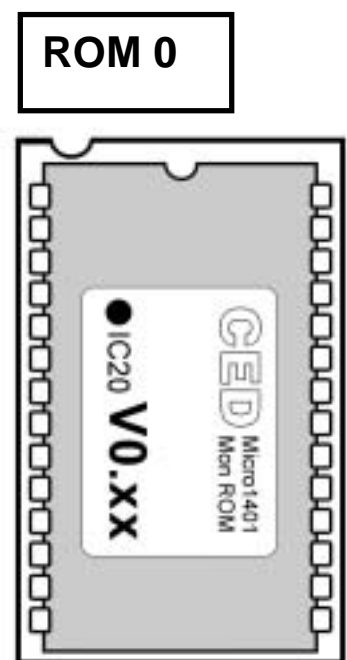
It is possible for a pin to miss its hole and get bent over as the chip is pressed down. This is the most commonly encountered problem; it may cause complete or intermittent failure. The pin can usually be carefully bent back into position and the chip re-inserted. Also avoid mis-positioning the chip while inserting, so that two socket holes are unoccupied and two pins are hanging over the other end. This will result in total failure and may damage the chip.

### **Power-up test**

Before closing the micro1401, reconnect the lead from the power supply and power it up briefly, to make sure that it passes its power-up self test: the red "TEST" light should come on for about 5 seconds then turn off. If it flashes continuously, the self-test has failed; switch the micro1401 off and check that the ROM is installed properly. In particular, make sure that none of the pins has been bent. If it still does not pass the test, contact the CED hardware help desk on (+44) 1223 420186.

### **Closing the micro1401**

Close the micro1401 by reversing the opening procedure detailed above.



*Monitor ROM in socket;  
note orientation notches.*